Affecting Geospatial Technologies: Toward a Feminist Politics of Emotion*

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Building on earlier contributions to feminist understanding of geospatial technologies (GT), I seek to further develop feminist perspectives on GT along new directions. I argue that an attention to the importance of affect (feelings and emotions) and the performative nature of GT practices offers a distinctive critical edge to feminist work on GT. I emphasize the need for GT practitioners to contest the dominant meanings and uses of GT, and to participate in struggles against the oppressive or violent effects of these technologies. I argue that only when emotions, feelings, values, and ethics become an integral part of our geospatial practices can we hope that the use of GT will lead to a less violent and more just world. **Key Words: affect, emotion, feminist politics, geospatial technologies, GIS.**

> A genuine feminist politics always brings us from bondage to freedom, from lovelessness to loving. . . . To choose feminist politics, then, is a choice to love.
>
> —(hooks 2002)

Geospatial technologies include a broad range of technologies for collecting, storing, displaying, or analyzing geographical information (e.g., geographical information systems [GIS]; global positioning systems, and remote sensing). Much has been written about the limitations and social implications of geospatial technologies (GT) since the early 1990s (e.g., Sheppard 1993; Curry 1994; Pickles 1995). Critiques have focused largely on issues of epistemology, representation, power, ethics, privacy violation, and the noncivilian deployment of these technologies. With contributions by critical geographers from diverse perspectives, considerable progress has been made in the nascent subfields of critical GIS and critical cartography to date (e.g., Schuurman 1999; Kyem 2004; Sheppard 2005; Crampton and Krygier 2006; Del Casino and Hanna 2006; Elwood 2006; Knigge and Cope 2006; Kwan and Knigge 2006; Pavlovskaya 2006; Propen 2006; Sieber 2006; Ghose forthcoming; Kwan and Aitken forthcoming).

Among recent critical perspectives on GT, feminist geographers have provided new insights since the early 2000s (e.g., Nightingale 2003; Gilbert and Masucci 2005; McLafferty 2005b). Sara McLafferty (2002, 2005a), for instance, examines the role of GIS in feminist activism and explores how GIS-based power-knowledge may empower or marginalize women activists as spatio-political scale shifts. Marianna Pavlovskaya (2002, 2004) examines the link between urban restructuring and the microgeographies of women's everyday lives in Moscow through a grounded story composed with GIS. Marie Cieri's (2003) study of queer tourism highlights how GT can be used to explore the gendered and sexualized geographies of urban space. I renegotiate the meanings of GIS at the intersection of science, art, and subjectivities (Kwan 2002a). I have also argued that GIS can be a site for deconstructing the binary understanding of geographical method and have called for a recovery of the critical agency of GIS users or researchers (Kwan 2002b, 2004). Much of this work is inspired by feminist critiques of modern science and visualization technologies and by poststructuralist feminist notions like situated knowledge, positionality, reflexivity, and performativity (e.g., Butler 1990, 1993; Haraway 1991; S. Harding 1991, 1998; Grosz 1994).

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In this article I seek to develop feminist perspectives on GT along new directions, building on earlier contributions to feminist understanding of GT. First, recent feminist thinking in geography has witnessed heightened attention to the importance of emotion in social life and knowledge production (e.g., Bondi 1999, 2003, 2005; Burman and Chantler 2004; Davidson and Bondi 2004; Ekinsmyth et al. 2004; Ettlinger 2004; Thien 2004, 2005; Bondi, Davidson and Smith 2005; Tolia-Kelly 2006). As Kay Anderson and Susan Smith (2001, 7) argue, the "human world is constructed and lived through the emotions" and yet feelings and emotions are silenced in both research and social life. Since emotions affect research processes and findings (Bennett 2004) and are highly political but rarely an important consideration in public policy (Kwan and Aitken, forthcoming), bringing emotions back to bear upon GT practices may offer new insights about ways of using GT that contest the dominant understanding and meanings of GT and their relationships with the social and political world (e.g., using GT as a means of resistance or political protest).

Second, nonrepresentational thinking has been influential both within and outside geography (e.g., Deleuze 1986, 1994; Deleuze and Guattari 1987; Baudrillard 1995, 2001; Thrift 1996, 1997; Smith 2003). Nonrepresentational theories challenge "the epistemological priority of representations as the grounds of sense-making" or as the means for acquiring knowledge about the world (McCormack 2003, 488). They emphasize the importance of the corporeal, affective, and unwritable dimensions of existence and turn our attention from representations to practices and performances (Nash 2000; Kwan and Aitken forthcoming). Critical reflections that nonrepresentational thinking inspired have pushed our understanding of maps, cartography, and GIS from conventional notions of representations toward feminist notions of performance and performativity (e.g., Del Casino and Hanna 2006).[1] Artists and scholars in cultural studies have recently drawn on these feminist notions to explore the use of GT as locative media for self-expression and articulation of emotional geographies (e.g., Parks 2001). These experimentations hint at new geospatial practices (or performances) that contest our understanding of GT as representational or communicative media.

In this article I address the two questions raised by Karen Dias and Jennifer Blecha (2007) for this themed issue in light of these recent developments in feminist thinking. I argue that an attention to the importance of affect (feelings and emotions)[2] in social life and research and the performative nature of GT practices offers a "distinctive critical edge" to feminist work on GT (Jenkins, Jones, and Dixon 2003, 59), and that GT can be a fruitful analytic project for feminist geographers. I highlight some recent works by feminist scholars and explore the ways in which they hint at alternative geospatial practices that are more relevant to the contemporary world, especially in light of the current epoch of wars, international conflicts, "natural" disasters, and globalization (Chomsky 1988, 2003; Enloe 1989; Gregory 2004; Hannah 2005; Hyndman 2005, 2007; Sparke 2005). I emphasize the need for researchers, developers, and users (hereafter "practitioners") to contest the dominant meanings and uses of GT, and to participate in struggles against the oppressive or violent effects of these technologies. Drawing on feminist conceptualization of affect (e.g., Thien 2005), I argue that geospatial practices need to be embodied and attentive to the effects of emotions, which mediate the social and political processes through which our subjectivities are reproduced (J. Harding and Pribram 2002; Bennett 2004). This not only involves reintroducing long-lost subjectivities of the researcher, the researched, and those affected by GT back to geospatial practices, but also involves making emotions, feelings, values, and ethics an integral aspect of geospatial practices. Only then will moral geospatial practices become possible, and only then can we hope that the use and application of GT will lead to a less violent and more just world.

Bodies and Emotions Matter

Geospatial technologies are designed, created, and used by humans, and a large proportion of their application is for understanding or solving problems of individuals and social groups. Bodies, however, are often absent or rendered irrelevant in contemporary practices of GT. This "omission of the body" occurs in two different but related senses (Johnson 1990, 18). First, although bodies are involved in the development and use of GT, there is little room in these

technologies to allow for any role of the practitioner's subjectivities, emotions, feelings, passion, values, and ethics. Second, despite the fact that a large number of bodies are affected by the application of GT (e.g., people profiled by geodemographic application, and civilians who were annihilated as "collateral damage" by GPS-guided smart bombs that missed their targets), bodies are often treated merely as things, as dots on maps, or even as if they do not exist (Gregory 2004; Hyndman 2005).

The dominant disembodied practices of GT, however, are contestable as they are largely the result of a particular understanding of science and objectivity (Kwan 2002a). This historically specific and socially constructed notion of science, as Donna Haraway (1991) argues, is predicated on the positionality of a disembodied master subject with transcendent vision. With such disembodied and infinite vision, the knower is capable of achieving a detached view into a separate, completely knowable world. The kind of knowledge produced with such disembodied positionality denies the partiality of the knower, erases subjectivities, and ignores the power relations involved in all forms of knowledge production (Foucault 1977). Haraway (1991, 189) calls this decorporealized vision "the god-trick of seeing everything from nowhere."

Closely associated with this view of science is a gendered notion of knowledge production and academic scholarship that privileges rational thought over "irrational" emotionality (Bennett 2004). This "marginalization of emotion," as Anderson and Smith (2001, 7) put it, "has been part of a gender politics of research in which detachment, objectivity and rationality have been valued, and implicitly masculinized, while engagement, subjectivity, passion and desire have been devalued, and frequently feminized." Geography in particular has tended to "deny, avoid, suppress or downplay its emotional entanglements" (Bondi, Davidson, and Smith 2005, 1). Yet, to paraphrase Anderson and Smith, there are times and places where lives are explicitly lived through pain, love, hate, anger, hope, fear, and passion. If the world is imbued with complex emotional geographies, GT practices are more relevant to real lives if they allow us to take the spatial, temporal, and social effects of feelings into account. To neglect how our research and social life are mediated by feelings and emotions is to exclude a key set of relations through which lives are lived, societies made, and knowledge produced (Anderson and Smith 2001).

As GT practitioners, our decisions to adopt particular research agendas and engage with particular issues (e.g., emergency response) are often motivated by the emotions provoked by events such as wars, environmental problems, and "natural" disasters (Bennett 2004). In fieldwork involving interaction between GT researchers and research participants, emotions expressed by the researched may provide insights about their relationships with others and their social worlds. In social and political contexts involving interaction among diverse groups of stakeholders, there are inevitably underlying feelings and tensions that cannot be clearly articulated or communicated—like "the thrown-chairs, the put-downs, the red-faces and the hugs" and "the anger, the frustrations, the sadness and the joys" in planning meetings that involve the data or results generated by GT (Kwan and Aitken forthcoming). Contemporary life is also imbued with emotionally intense encounters brought about by real-time media coverage of events around the globe (e.g., planes crashing into buildings, dead bodies of tsunami victims, and violent encounters in antiglobalization protests). Exploring and developing new GT practices that are attentive to bodies and emotions is therefore an important and fruitful feminist project.

The critical project that aims to bring bodies and emotions back in GT practices entails several important elements. As feminist GT practitioners, we can appropriate the power of GT, contest the dominant uses of these technologies, and reconfigure the dominant visual practices to counter their objectifying vision. We can experiment with new geospatial practices that better articulate the complex realities of gendered, classed, raced, and sexualized spaces and experiences of individuals. These new practices should help us understand emotions in terms of their "socio-spatial mediation and articulation rather than as entirely interiorized subjective mental states" (Bondi, Davidson, and Smith 2005, 3). While being attentive to how emotions, subjectivities, and spaces are mutually constitutive in particular places and at particular times, these new practices should also take into account the existence of different kinds of bod-

ies (e.g., pregnant, disabled, old, mutilated, dead) and their socially encoded meanings in relation to specific spatial, temporal, and cultural contexts (Rose 1993; Laws 1997; Domosh and Seager 2001; Longhurst 2001). In the arena of public policy, feminist GT practitioners have a role in questioning decisions that privilege detached rationality and the "logic of efficiency" over emotions (Anderson and Smith 2001, 8).

As feminist GT practitioners we deeply care about the subject(s) of our research and are "emotionally committed to our work," and our geospatial practices should be infused with a sense of "emotional involvement with people and places" (Bondi, Davidson and Smith, 2005, 2). We can develop GT practices that entail this emotional involvement and help express meanings, memories, feelings, and emotions for our subjects. We can draw on the emotional power of moving images and the techniques in narrative cinema to create GIS movies or visualizations that tell stories about the lives of marginalized people, highlight social injustice, and—we hope—effect social change (Aitken 1991; Aitken and Craine 2006).

In the three sections that follow, I discuss several GT projects to illustrate the specific ways in which bodies and emotions can be brought to bear on geospatial practices. Drawing from my recent experimentations and those by feminist scholars in cultural studies and media art, I explore how these projects contest the dominant meanings and visual practices of GT. As these projects are more expressive than representational or analytical, taking the form of creative visual or artistic work (e.g., GPS-assisted travelogues and 3D GIS video), they are in a certain sense "affective GT performances" that seek to transform GT into affective practices by incorporating the subjectivities and emotions of the practitioner and research participants as an integral element of the project. Through the use of GT as a medium of self-expression and a means of resistance, and to articulate emotional geographies and convey emotionally provocative messages, these nonrepresentational practices hint at ways of using GT that transcend the conventional duality between subject and object, design and use, author and reader, and representation and practice (Del Casino and Hanna 2006).

Subject(ive) Mapping with Global Positioning Systems

Lisa Parks (2001, 209), a cultural critic and video artist, contests the meanings of Global Positioning System (GPS) by using it as an interactive technology for "plotting the personal." She explores whether the GPS can be used to document human movement and everyday experiences in a way similar to that of photography, home videos, and travelogues. She highlights the paradoxical nature of GPS and argues the need for critical strategies that struggle over the meanings of satellite technologies. She states that the "satellite occupies a remote orbital position beyond users' reach and outside of the field of vision; satellites have historically been controlled by states and used in myriad ways without citizens' knowledge, involvement or consent; and satellites are high-tech, high-capital and high-maintenance devices that are seemingly beyond the purview of the popular and the personal" (Parks 2001, 210). Parks contends that what state-sponsored and commercial digital mapping projects share is their quest for total vision and total knowledge of the planet. She argues that the personal plot (personal map) she explored works against this centralization of vision and knowledge by insisting that GPS need not be used to articulate the agendas of the state or business. Instead it can be used as a means of storytelling and a technology for self-expression.

Parks explored GPS as a means of articulating the politics of location through linking and interpreting an individual's global position (location data produced through satellites) with her subject position (historically and socially constituted identities). Through a discussion of GPS tracks of her movements that she recorded in two recent trips, one in California and the other in Alice Springs, Australia, she illustrates how GPS maps might produce such politics. As Parks (2001, 216) puts it, "At each juncture I entered a waypoint, ensuring that each moving trace would be remembered. I was reminded here of my own mobility relative to theirs—and that my GPS map of California would look quite different from that of a migrant worker, a Chinese pharmacist, a high-tech executive or a groaning seal for that matter." She suggests that GPS maps (or personal plots) offer "new ways of visualizing social difference that are based on

human movement rather than physiognomy or pigmentation" (Parks 2001, 211). These visualizations, she argues, enable us to conceptualize more precisely how identities are constituted through material, bodily movements.

Like travel photography, Parks (2001, 213) suggests, "the GPS receiver, rather than capturing an objective record, instead generates a visual display that may activate memories of subjective perspective, of a particularly situated point of view." GPS not only registers location coordinates but also records the highlights, landmarks, and special events of one's journey—those personal experiences that are not coded within conventional maps. In this sense, Parks argues, the GPS map combines the objective and omniscient discourse of cartography with the subjective, grounded experience of the user. Visual representation of the moving body by GPS introduces the possibility of subject(ive) mapping. Although represented as a series of lines and dots, the body's movement transforms the map from an omniscient view of territory into an individualized expression. By plotting the personal, GPS inscribes embodied practices into the discourse of mapping and allows the user to call into question the objective status of the map by inflecting it with personal movement. The producer of the GPS map is none other than the body that traveled, walked, or moved along a certain trajectory carrying a GPS receiver. The practice of plotting the personal, then, figures the user as subject, produced through a series of movements and encounters. Drawing on Paul Virilio (1997) and Gilles Deleuze (1986), Parks calls this subject "the trajective self," referring to a space in between the subjective and objective that accounts for the ongoing condition of bodily movement.

Further, as Parks (2001, 214) suggests, "GPS mapping involves the act of self-positioning by recording and displaying movements from here to there. The goal of the personal plot is not to reproduce panoramic vistas, but rather to display one's changing position and archive one's routes." The GPS maps therefore represent the possibility of a mediated experience, as they often necessitate storytelling and narration because what they reveal is seen and experienced from very specific and personal points of view. When used as a technology of self-reflection, GPS invites the user to see herself as a subject-in-motion, as an author and a reader, reflexively inscribing personal trajectories onto the text of the social world of her everyday life. In this light, GPS receivers can be used as technologies of self-expression, creating spatial interpretation and social understanding as much as they can be used as tracking and monitoring devices.

The Amsterdam RealTime Project, as Amy Propen (2006) describes it, shares critical intent similar to Parks's personal plot. In the Amsterdam project, real-time location data from the GPS-enabled personal digital assistants (PDAs) of the participants were sent to a central server via wireless Internet connection. As the GPS tracks were visualized against a black background without showing any information about the city (e.g., streets or parcel boundaries), the participants' movements in real-time construct their own maps and representations of the city. Through creating personalized maps of the city with the performances of their own bodies (recorded and visualized as GPS tracks), the project participants (who were all volunteers) were the authors (subjects) of these plots and at the same time were being portrayed in these maps (objects). The project therefore contests the conventional distinction between author and reader, subject and object, performance and representation (Del Casino and Hanna 2006).

Collaborative 3D GIS Videography

As I argued earlier, feminist GT practitioners can draw on the emotional power of moving images and techniques in narrative cinema to create GIS movies that tell emotionally provocative stories or that highlight social injustice (Deleuze 1986, 1998; Aitken 1991; Aitken and Craine 2006). Cinema, in Gilles Deleuze's (1998, 15) view, tells "stories with blocks of movements/duration." As Stuart Aitken (1991, 105) argues, the frame-sequence in a motion picture "portrays the dynamic interaction between people and their social and physical environments," and the foundations of successful narrative cinema lie in a unique portrayal of this dynamic interaction.

In a recent project, I explored ways of using moving images generated by GIS for articulating emotional geographies and contesting the objectifying vision of GIS-based 3D geovisualization. Drawing on the methods in visual ethnography, visual sociology, and film studies (e.g., Banks 2001; Pink 2001; Rose 2001; Buck-

land 2003), I created a 3D GIS movie that is more an artistic and expressive visual narrative than an objective recording generated with the aid of scientific visualization. As Sarah Pink (2001) suggests, video materials should not be treated merely as visual facts but rather as representations in which the collaborations and strategies of self-representation of those involved are part of their making. For visual ethnographers, video is not simply a data-collecting tool but a technology that participates in the negotiation of social relationships and a medium through which ethnographic knowledge is produced. Participatory video has been used by feminist geographers in action research that seeks to encourage communities to "analyze their social world and to explore the construction of meaning" (Kindon 2003, 143). The collaborative use of video, as Kindon (2003, 143) suggests, has "considerable transformative potential in terms of the action it may generate."

Based on these notions of participatory video and narrative cinema, I developed "collaborative 3D GIS videography," a method of creating videos using moving images rendered by a 3D GIS for articulating the personal experience and story of a particular research participant. I produced a video based on the oral history of a Muslim woman in Columbus, Ohio (who was a key informant of the study), about her feelings when traveling and undertaking activities outside her home shortly after 11 September 2001 (hereafter "9/11"). The purpose of the study was to understand the impact of post-9/11 anti-Muslim hate crimes on the perception of safety and use of public space of the Muslim women in Columbus, Ohio, study. Several months after 9/11, I traveled with her for one day as she drove her minivan to undertake her normal out-of-home activities. As we passed through various routes, she recalled her feelings and fear when she saw particular buildings or stores (and her oral narrative was recorded). Using the textual transcripts of such audio recordings, the field notes I took on that day, and the activity diary and map sketches she completed during an in-depth interview, I portrayed her body's space-time trajectory and her emotions as she moved around the study area with a 3D GIS.

Contrary to the high-angle perspective commonly used in 3D geovisualization, the video that I produced adopts her point of view (in the literal sense) as the vantage point. The moving images of the video show what she saw (rendered by 3D GIS) as she drove through various routes in the study area on a particular day after 9/11; her movement is portrayed as a personalized space-time trajectory that is color-coded to reflect the level of fear and perceived danger she experienced, and the buildings along the road were also color-coded to indicate the level of perceived danger she experienced as she passed them. Audio clips from her oral narrative were also incorporated, resulting in a video that not only shows the routes and the spaces her body moved through, but also tells her story through the images and her oral narrative as she recalls what happened to her life and how she negotiated the hostile urban spaces after 9/11. It shows what she saw and experienced from her personal point of view (i.e., from the position of a driver who was traveling along various roads in the study area). It is a powerful form of individualized storytelling based on her personal movements, memories, feelings, and emotions.

The 3D GIS video I produced seeks to "present its subject matter in a subjective, expressive, stylized, evocative and visceral manner" (Buckland 2003, 145). It is not an "objective" or impartial video recording of anything that can be captured by a conventional video camera. Its scenes have many physical elements that are considered to be parts of the objective reality and scientifically visible "facts" of the study area (e.g., buildings and roads), but they are rendered from the GIS database with symbolic and artistic techniques, which helped to create an expressive visual narrative that was produced collaboratively with the informant. For instance, a green line was used to represent the tiny comfort zone that she experienced as she drove her minivan through a major road in the study area, and the oppressive effect of the hostile urban environment was symbolically represented by coloring the surrounding buildings as red blocks. Further, instead of being filmed, represented as a protagonist, and being watched by spectators, the informant does not appear in the video. She is the person who saw and acted, and mainly her emotions, feelings, memories, and experiences find expression in the video. The video produced is therefore not only about her but also for her—she is situated at the center of its production. It portrays her emotional geographies in terms of the dynamic interaction

between her feelings and the post-9/11 urban environment of the study area. Through this shift from a spectator's viewpoint to the protagonist's (subject's) viewpoint, the video contests the objectifying gaze of conventional 3D geovisualization practices through a particular spatial and visual organization of its elements.

GT Art Practices as Politics of Resistance

As Parks's and my own work have shown, GT can be appropriated as media for self-expression and articulation of emotional geographies. These experimentations contest the detachment, rationality, and objectifying vision entailed in conventional GT practices. Map artists and art activists have long created art maps that contest the authority and content of official maps—witness the maps produced by the Surrealists and the Situationists (Krygier 2006; Varanka 2006; Wood 2006). Art maps are often created by extensively reworking preexisting maps, "redrawing, digitally altering, painting over, and reorienting the original images" (Wood 2006, 10). They point toward worlds other than those mapped in official maps and seek to "produce new configurations of space, subjectivity and power" (kanarinka 2006). Each art map is therefore not only a "work of art" but also a "political action" (Deleuze and Guattari 1987, 12). Similarly, GT can be appropriated as a digital art medium and used to create artworks that protest against social injustice and violence. GT art practices can be undertaken or performed as a form of resistance (Deleuze 1998; Kaufman 1998; Klebesadel 2003).

Based on these notions of art practices as politics of resistance, I have explored GIS as an artistic medium for generating digital artwork using GIS software and data. As GIS was not developed and designed for artistic work, my GIS art project intends to challenge the understanding of GT as scientific apparatus for producing objective knowledge or as an instrument of domination. I seek to destabilize the fixed meanings of GT that have precluded their use in novel and creative ways. Through my GIS art I also articulate my discontent with the use of GT in wars and international conflicts that result in large numbers of civilian casualties (Gregory 2004; Hyndman 2005, 2007). I also protest against the use of these technologies in any applications that violate personal rights and privacy, as in geodemographic and surveillance applications.

I have explored the aesthetic potential of GIS by experimenting with various artistic styles and techniques (Figures 1 and 2).[3] The digital spaces of GIS have been appropriated as my spaces of resistance, which elude state sanction on the more readily recognizable spaces of political protest (Pile 1997; Wainwright forthcoming). My GIS art project was undertaken out of my sadness in light of the human casualties resulted from the attacks at the World Trade Center and the Pentagon on 9/11 as well as the ensuing wars and violent conflicts in the Middle East. In the project, GIS was used to create digital images that are aesthetically pleasing, but none of the visual elements in these images corresponds to any particular object in the world. For instance, the image shown in Figure 1 was created with three layers of real vector GIS data. The color schemes of these data and their overlay properties were first tweaked in a GIS. The map file was then imported to an image processing program and processed with several artistic filters that transformed it into a drastically different image.

Through this abstract and nonrepresentational GIS art practice, GIS is momentarily dissociated from any precepts of science, objectivity, transcendent vision, exploitation, surveillance, or control. I thus participated in the cultural politics of contending the meanings of GT (albeit at a personal level), as cultural politics "are contestations over meanings, over borders and boundaries, over the ways we make sense of our worlds, and the ways we live our lives" (Mitchell 2000, 159). Through this geospatial aesthetics grounded on my concern about the role of GT in global violence, I insist that GT should be used primarily for creating a more just and peaceful world, as when the technologies are used in research on environmental justice or for empowering marginalized social groups (e.g., Mennis 2002; McLafferty 2005a). In the project, GIS was used as a medium of passionate politics for countering the dominant practices. It is in this sense that my GIS art project can be understood as part of a broader counterhegemonic struggle over GT, as a form of questioning, and a form of protest and resistance.

My GIS art project and Parks's (2001) personal plot, however, are largely personal endeavors. In order to influence public policy

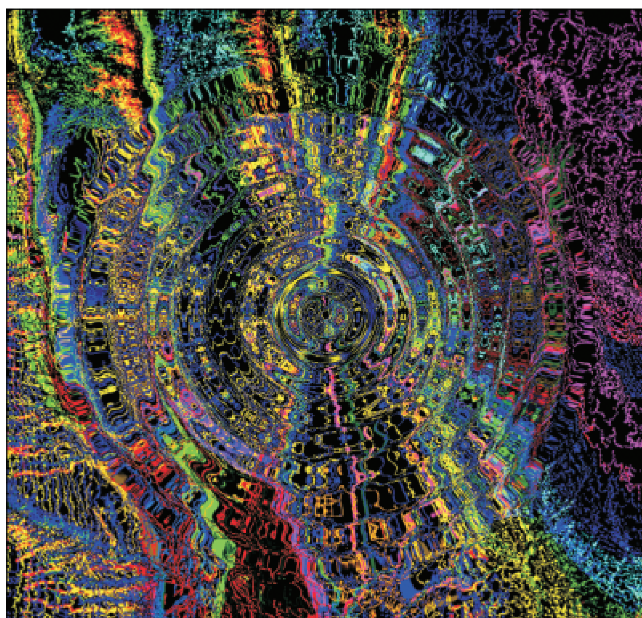

Figure 1 *Digital image created with three layers of vector data. Artistic effects were added to the original image with image processing software.*

and to effect broader social change, politics of resistance at the individual level needs to be scaled up and connected to collectively practiced politics. The recent trend of increasing collaboration between researchers, artists, and community groups in projects that seek to understand people's feelings and concerns may be indicative of how this connection can be made (e.g., Rose 1997). For instance, the Greenwich Emotion Map Project engaged art activists and local residents to reflect on the social change taking place on the Greenwich Peninsula (Nold 2005). It was a mapping project that aimed at understanding how local residents

Figure 2 *Digital image created with Triangulated Irregular Network (TIN) data. Artistic effects were added to the original image with image processing software.*

feel about the area based on their personal exploration and journeys. In the project, biomapping devices worn by participants recorded their emotional response (their body's level of stimulation) to and interaction with their immediate environment, and a GPS tracked the routes they took. On returning to the studio, the information and photos taken along the way were uploaded and interpreted by participants to create a personal visual narrative. The resulting emotion maps encouraged participants' personal reflection on the complex relationship between them, their local environment, and their fellow citizens. The project allowed local residents of the Greenwich Peninsula to visualize where they feel stressed and excited, to articulate their concerns, and to engage with wider community issues (Nold 2005).

In my study of the post-9/11 experiences of the Muslim women in Columbus, participation in the research seemed to have helped them recognize the need to address the threat of anti-Muslim hate crimes on their everyday life. The key informant, for instance, became an activist in the local Muslim community. She is involved in activities that aimed to mitigate anti-Muslim sentiment and misunderstanding about the Islamic faith (e.g., through interfaith activities and mosque open houses). Although the purpose of my study was to understand the personal feelings and experiences of the participants, it indirectly led to collectively practiced politics that seeks to change other people's attitudes toward them.

Toward Embodied Practices and Passionate Politics

The wars following 9/11 have taken an enormous human toll, sometimes with the assistance of GT such as GPS and remote sensing. The failures that Hurricane Katrina revealed, which many had hoped to be able to avoid through the help of GT, are also disconcerting. As feminist GT practitioners, we need to think carefully about the kinds of geospatial practices that are truly relevant to the contemporary world. We should engage in the development of GT practices that help to create a less violent and more just world. I have argued in this article that embodied practices and passionate politics of GT that are attentive to bodies, emotions, and subjectivities will help us move beyond software and data to focus on real people and real lives. Drawing on recent developments in feminist thinking, I suggest that attention to the importance of affect and possibilities of performing (practicing) GT as resistance would lead to distinctively feminist contribution to research and practice on GT.

Feminist geography affords a rare discursive space for making emotions, feelings, values, and ethics an integral part of our work (Whatmore 2002; Ekinsmyth et al. 2004; Sharp, Browne, and Thien 2004; Trauger 2004; Bondi, Davidson and Smith 2005; Kobayashi 2005). Mobilizing emotions in our work not only represents an important element of the feminist project that seeks to recenter bodies in geospatial practices, it also entails experimentations with more expressive and evocative forms of visual practices for conveying provocative feminist messages. As video artist Pipilotti Rist points out, "Messages that are conveyed emotionally and sensually can break up more prejudices and habitual behavior patterns than ... intellectual treatise" (cited in Riemschneider and Grosenick 2001, 142). Feelings and emotions have long been silenced in research and social life. Bringing them back to bear upon our GT practices would have considerable potential for yielding insights about new ways of using GT.

In order to effect broader social change, however, it is important to scale our care or concern from the personal/local level up to larger contexts. Although most of the projects I describe in this article were undertaken as personal endeavors, our personal politics of resistance needs to be scaled up to the level of collectively practiced feminist politics. Collaborative projects undertaken by GT researchers, feminist/art activists, and community groups throughout the world offer important inspiration for how this may be accomplished (e.g., McLafferty 2002, 2005a; kanarinka 2006). As feminist GT practitioners, we should develop innovative means to protest against the use of GT for violence and to engage in political activism that turn violence and fear into hope. Only when emotions, feelings, values, and ethics as well as a commitment to social justice become integral elements of our geospatial practices will moral geospatial practices become possible. Only then can GT help create a less violent and more just world. ■

Notes

[1] The feminist notion of performativity (based on Judith Butler's 1990 and 1993 works) concerns the processes through which gender identity and social practices are mutually constituted. As my focus here is on geospatial technologies (not processes of identity formation), this article instead invokes the notion of "performativity" through its more common understanding as "performance" and "practice." Following Liz Bondi (2005), I argue that the way these notions are used in the article does not depend on any particular theorization of the relationship between emotions and performativity.

[2] The term *affect* can mean many different things and is often "associated with words such as emotion and feeling" (Thrift 2004, 59). Its meanings seem to have derived from different traditions, which include (Thrift 2004) Freudian psychoanalysis (instincts, drives, and emotional impulse), Spinoza's metaphysics (changes in the experiential states of the body through actions and encounters), and the phenomenological tradition (expressive feeling and behavior manifested through bodily states). Although the term *affect* cannot be reduced to personal feeling nor be detached from the body's capacity to act, it is used loosely in this article to encompass both emotion and feeling. For helpful critiques of recent notions of affect, see the discussions in Deborah Thien (2004) and Divya Tolia-Kelly (2006).

[3] Digital versions of these two figures are available at http://geog-www.sbs.ohio-state.edu/faculty/mkwan/AffectGT.html.

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